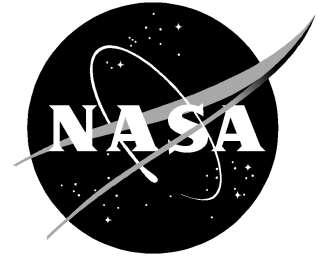


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SYSTEM TACKLES WAKE VORTEX SPACING ISSUES

NASA Technology Would Reduce Flight Delays

Airline passengers frustrated with delays at U.S. airports may be able to reach their destinations faster, because of a revolutionary new technology developed at the NASA Langley Research Center in Hampton, Va.

NASA researchers have designed a system to predict aircraft wake turbulence on final approach, so airliners can be spaced more safely and efficiently. The technology is called AVOSS or Aircraft Vortex Spacing System. The system determines how winds and other atmospheric conditions affect the wake vortex patterns of different types of aircraft. AVOSS uses a sort of laser radar or lidar technology to confirm the accuracy of those forecasts. All this information is processed by computers, which can then provide safe spacing criteria automatically.

NASA will demonstrate a prototype wake vortex spacing system at Dallas-Fort Worth International Airport (DFW) July 17 through 20 to news media and Federal Aviation Administration officials and other government and industry representatives.

"All aircraft produce wake vortices... sort of like two small horizontal tornadoes trailing behind the wing tips," says AVOSS principal investigator David Hinton. "The larger and heavier the plane the stronger the wake." That means small aircraft that follow larger ones can encounter turbulence if they're not kept far enough apart. That turbulence can be severe enough to cause a plane to crash.

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Weather plays a big part in the motion and decay rate of these trailing twisters. There has been no system to accurately predict wake vortex patterns and quantify the spacing needed for safety. This lack of information forces air traffic controllers to use rigidly fixed distances to separate different classes of aircraft during bad weather, causing air traffic delays that disrupt flight schedules and increase costs.

NASA's Aircraft Vortex Spacing System can provide that information. The system was installed at the Dallas-Fort Worth International Airport three years ago and has undergone development and testing since then. Initial test results show that AVOSS can increase individual runway capacity as much as 15 percent depending on weather conditions and the number of "heavy" aircraft arriving.

"With a system like AVOSS installed at DFW Airport, we would have the capability to increase runway safety, while improving runway capacity by as much as 15 percent," said Executive Director Jeff Fegan, Dallas/Fort Worth International Airport. "DFW operations average nearly 2,300 flights per day. Increasing the amount of planes that can land every hour means fewer delays for our passengers."

NASA worked with the Federal Aviation Administration, Dallas-Fort Worth International Airport, Massachusetts Institute of Technology Lincoln Laboratory, Transport Canada, Volpe National Transportation Center and others to develop the Aircraft Vortex Spacing System. AVOSS is a part of the NASA Aviation Systems Capacity Program, headquartered at Ames Research Center, Moffett Field, Calif.

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NASA and Dallas-Fort Worth International Airport will offer a special media demonstration of the Aircraft Vortex Spacing System Monday morning, July 17, at Dallas- Fort Worth International Airport. Interested media should arrive at the DFW Administration Building in time for a 10 a.m. briefing in the Executive Boardroom. Tours of the ground systems will follow. A video news release is available on request. During the demonstration AVOSS will not be used to change the actual spacing of arriving aircraft. Wake detection lidars will be used to validate system operation.